DOCUMENT RESUME

ED 421 158 IR 018 878

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TITLE	Getting Elementary Educators Caught Up in the Web.
PUB DATE	1998-00-00
NOTE	7p.; In: "SITE 98: Society for Information Technology & Teacher Education International Conference (9th, Washington, DC, March 10-14, 1998). Proceedings"; see IR 018 794.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Computer Attitudes; Computer Uses in Education; Educational Resources; Elementary Education; *Elementary School Teachers; *Faculty Development; *Inservice Teacher Education; Listservs; Teacher Attitudes; Training; Workshops; *World Wide Web

ABSTRACT

This paper describes the development and implementation of a World Wide Web training session for educators in a local elementary school. A K-12 World Wide Web Educator's listserv proved to be invaluable in obtaining suggestions for Web-based curriculum resources which K-12 educators had reviewed and evaluated. Washburn University's (Topeka, Kansas) computing lab was chosen for the hands-on training. A written reference manual was provided for the teachers to take away with them. Goals of this teacher inservice training were three-fold: (1) to provide background information on the Web and search techniques; (2) to increase the teachers' awareness of the multitude of curriculum resources already available on the Internet for K-6 educators; (3) to have the teachers create a simple Web-based activity using a Web authoring tool. The schedule of events is outlined, and teacher feedback comments and critical success factors are listed. (AEF)

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Getting Elementary Educators Caught Up in the Web

By:

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Getting Elementary Educators Caught Up In The Web

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For the past four years I have conducted a one-week summer computer camp for fifth through seventh grade students which has been a fun and effective learning experience for the attendees. Invariably, I receive comments from elementary and middle school teachers regarding the possibility of holding a camp for teachers or allowing teachers to register for the camp. Based on comments such as these, as well as comments from my own children's elementary school teachers, I began to perceive the need to develop a hands-on learning experience for public school teachers. This learning experience would be designed to familiarize them with the resources available on the World Wide Web so that they could use the Web as a tool to enhance their teaching.

In particular, I believe teachers need to become aware of the myriad of curricular sites targeted for elementary education developed by educators for educators. They need to know about the opportunities available for collaborative learning projects and on-line classes. In addition, they need to become aware of how easy it would be for them to develop their own web lessons using web authoring tools.

I approached a fellow colleague with this idea, and, together, we developed a proposal for providing a hands-on World Wide Web training opportunity for a local elementary school. This proposal was presented to the elementary school principal in the spring of 1997, and the training was scheduled as an in-service session which would be held in late August prior to the beginning of the fall, 1997 school year.

Preparation

My colleague and I requested the name of an on-site contact person from the elementary school so that we could funnel requests for information back and forth from the school. One of our first requests of the contact was for teachers to submit a list of units they would be covering early in the fall semester of the new academic year. We requested this information last spring so that appropriate materials could be developed prior to the beginning of the upcoming school year. By focusing on topics for which the teachers were already preparing lesson plans, we hoped to demonstrate that the World Wide Web could be used as a tool to immediately enhance the curriculum which was being taught rather than an additional subject to be added to their already full load.

Our on-site contact person provided the following list of curriculum units in late May:

Fourth Grade
- Celebrations
- Nutrition
- Geography of U.S.

Fifth Grade
- Environment/Conservation
- Native Americans/N. American Prehistory
- Six Trait Writing

Sixth Grade
- Volcanoes
- South America
- Mexico

We did not receive unit information from the K-3 teachers. Our contact explained that the late elementary grades would probably have wiring to connect to the Internet in their individual classrooms by the fall semester and the school would prefer to concentrate on these grades. Based on the information obtained, we were ready to begin gathering together our web-based curriculum resources.

In preparation for this training, I subscribed to a K-12 World Wide Web Educators' listserv (WWWEDU - listproc@ready.cpb.org). This mailing list was invaluable in obtaining suggestions for web-based curriculum resources which K-12 educators had reviewed and evaluated. I saved these postings to a mail folder and in the months that followed, I visited many of the suggested sites and bookmarked those that were appropriate for K-6 educators. I made certain that at least two curriculum resources sites were identified for every unit suggested by the teachers the previous spring. In addition, since the specialty teachers and administrators were also attending this training, curricular resource sites for art, physical education, music, special education, counseling, and elementary educational administration were included. These "specialty" sites proved to be the most challenging to locate. We employed

several advanced search techniques to locate relevant, appropriate curriculum sites for these educators to visit.

Because this was to be a hands-on lab experience, we reserved a computing lab at Washburn University for this training. The university lab was chosen for the following reasons:

1. The lab contained powerful microcomputers which were connected to the Internet by means of a T1 connection. This ensured the participants would be able to browse the Web relatively quickly and not become frustrated waiting for web pages to load.
2. The university lab contained a sufficient number of microcomputers so that the participants would be able to work in pairs rather than being forced to work in groups of three or four.
3. The elementary school had been targeted to receive a new computer lab during the summer; however, there was no guarantee that the lab would be ready by the training date.
4. We were familiar with the university lab and had ready access to it while preparing for this in-service.
5. The university lab was configured similarly to the way the elementary school lab was to be configured.

After much discussion, my colleague and I decided to provide a written reference manual for the teachers to take away with them. Past experience had taught us that hands-on lab activities, while easy to complete with the instructor's guidance, become much more difficult for learners once they leave the classroom environment. By providing step-by-step written instructions for the lab activities completed during the in-service, teachers would be able to recreate this lab experience when they returned to their elementary school.

The goals of this teacher in-service training were three-fold. First, we wanted to provide background information-what the World Wide Web is, how it works, and some general searching techniques. Second, we wanted to increase the teachers' awareness of the multitude of curriculum resources already available on the Internet for K-6 educators. Third, we wanted the teachers to create a simple web-based activity using a web authoring tool. In order to accomplish these goals it was necessary to streamline the process by which the teachers would access web sites. We determined that the most efficient way to streamline web site visitation was to design a home page which contained links to various categories of web sites to visit. Because the URL address links were included in these web pages, the teachers would not be required to type in the individual locations. They would simply need to scroll down the web page, read the description of the link, then point and click to access the site. By eliminating the typing time and the data entry errors which are commonly made when entering URLs, the teachers would be able to spend more time exploring and less time typing. This proved to be a very effective method of allowing teachers to quickly "Surf the Net" and it reinforced the concept of hyperlinks.

We created the in-service home page using Netscape Navigator Gold Version 3.01. This version of Netscape contains a web authoring program-Netscape Editor. Because all of the curriculum sites to visit had been bookmarked in Netscape Navigator, it was a simple process to copy the links from the Bookmark file into the web page as it was being created in Netscape Editor. Once our home page was built, it was stored on a floppy disk along with all the associated web page files and graphics. Every teacher received a copy of this disk. During the in-service training, the teachers were able to open the home page file in the Netscape browser from their floppy disk drive and they were off and running.

Because of the limited amount of time available for the teachers to learn to develop web pages themselves, we decided to guide the teachers as a group through the creation of a web unit. I designed and created this web activity before the training was held. After reviewing the list of units submitted by the teachers, I selected the Nutrition unit to be the subject of my web-based activity. I searched for appropriate kid-oriented sites to become links in my web activity and bookmarked them. I then utilized Netscape Editor to create a web activity that would require students to read and follow directions given on the web page. Internet resources were embedded within the web activity to provide assistance to the students in completing their assignment. By utilizing only text and Internet links (no graphic images), a simple but effective project was developed which the teachers could easily complete in the limited time available to them. We incorporated a printout of the finished product into the written reference manual so that the teachers would be able to refer to the booklet as they created the web page.

As with all seminars, this seminar was planned for a particular day, with no possibility of postponement due to "technical difficulties." The major portion of this training session was dependent upon the availability of Internet resources. To prepare for the possibility of a disruption in web access, we saved all critical web sites on the floppy disks which were provided for the teachers. If the Internet connection was not available on that day, we would still be able to utilize the browser software to open these web sites locally.

Implementation

The teachers who were involved in the training varied widely in their knowledge of the World Wide Web. Some teachers knew how to access the Web and had even incorporated some web activities into their curricula. Others had limited exposure to technology and were quite apprehensive about exploring this brand new tool. No attempt was made to group the teachers by their level of expertise. On the day of the training, teachers were grouped

at the computers, two to a computer, according to grade level. In addition, the early elementary grade levels (K-1) were placed adjacent to each other as were the intermediate elementary grade levels (2-3) and the late elementary grade levels (4-6). This arrangement allowed for increased interaction among the grade level instructors who had similar curricular interests. As the day progressed, it was interesting to note how the groups of teachers began sharing information among themselves. Because of their close proximity, first grade teachers could see what the kindergarten teachers were viewing on the screen and vice versa. This led to exchanges of web site URLs and peer instruction regarding how to navigate around at different web sites.

My colleague and I designed the following schedule of activities for the in-service:

8:30-9:30 What Is This Thing Called the World Wide Web?

During this activity the teachers were introduced to the basic concepts of web pages and links as well as to how uniform resource locators (URLs) represent address locations on the World Wide Web. We discussed the purpose of the home page as well as the underlying HTML code which is used to generate web pages. We then introduced the teachers to Netscape Navigator and explained fundamental navigation activities such as clicking on links, using the navigation buttons, and setting bookmarks.

9:30-10:30 What's Out There for Educators?

At this time teachers learned how to use the home page we created which contained links to the various curriculum sites we had identified. They learned to use commands such as File | Open File in Browser and were reminded to set bookmarks at sites which they found interesting and which they might wish to revisit later. During this session, we began to see the beginnings of collaboration among the various teachers as they discovered and shared with their cohorts sites which might be useful in their own classrooms. Because we had intentionally included curriculum resources which directly related to the curriculum units they had submitted the previous spring, they were able to find relevant sites very quickly without having to learn how to ferret them out using search engines.

10:45-11:30 What Have Other K-6 Teachers and Elementary Schools Done?

We had created another linked web page which contained a list of exemplary elementary school web sites and good examples of web activities which elementary school teachers have created for their classrooms. Teachers visited these links to discover how other K-6 educators were currently using the web in their schools. Many of the elementary school links listed were using their web sites to communicate with parents and students as well as to provide web resources and technical assistance for their teachers. The web activities developed by other elementary educators gave our teachers some indication of how their counterparts were using the web as a means of enhancing learning opportunities for their students.

1:00-1:45 Internet Search Strategies

In order for teachers to utilize the web effectively in their classrooms, they needed to learn how to develop effective searching strategies so they could locate relevant and beneficial web sites to use as curricular resources to enhance students' learning experiences. We discussed the importance of determining the type of information they wanted to find (lesson plans, scavenger hunts, web activities, etc.) as well as the target audience (other teachers, students, themselves). In addition, we emphasized the need to create descriptive search strings. We then led the teachers through a series of searches where the increasingly descriptive search strings narrowed in on fewer and fewer "hits" and created a manageable number of sites to visit.

1:45-3:00 Let's Build a Web Lesson TOGETHER

The teachers were ready now to begin building their own web activity. As previously stated, I had chosen the nutrition unit to be the web lesson we would design. We walked through the entire process as a group, beginning with determining the type of information (web activity) and the audience (students). We then brainstormed a list of descriptive phrases which we could use to search for appropriate resources for their elementary students to visit as they worked through this web activity. We conducted a few of the searches, but in the interest of time, I gave them the URLs I had previously located for the web activity. The teachers accessed these locations and bookmarked each of them for use in our web activity. This gave us the opportunity to review the "anatomy of a URL" which had been discussed much earlier in the day. Once all of the sites were visited and bookmarked, we were ready to develop our web activity.

The teachers were directed to examine the printout in their reference manual which showed how our finished web activity would appear when we had completed our task. By reviewing the finished product, the teachers were able to envision how students would access our bookmarked sites as reference materials when working through this web assignment. We discussed the fact that the only difference between using a word processor and Netscape Editor to create this activity was the ability to insert links and graphics. We briefly talked about how many of the newest versions of popular word processors such as Word and WordPerfect have incorporated this web page design capability into their products.

At that point, we were ready to begin. Together we walked through the process of activating the Bookmark file (Window | Bookmarks) so that we could use it to copy our links into the web page we were creating with the Right-

click copy function. We then opened the Netscape Editor (File | New | Blank Document) and immediately named our lesson (File | Save As). The teachers were then able to type in the text of the activity as printed in the written manual. When all of the typists reached the point where they needed to insert a link, we walked through the following process together the first time:

1. Activate the Bookmark window
2. Highlight the appropriate bookmark to copy
3. Right-click the mouse and choose Copy
4. Activate the Netscape Editor window
5. Position the cursor at the point to include the link
6. Click on the Link button on the button bar.
7. Complete the link dialog box making certain that the actual URL is copied using the Right-click Paste option into the location entry box.

When the entire lesson was completed in Netscape Editor, the teachers saved the file (File | Save), closed Netscape Editor (File | Close), and accessed their newly created web activity (File | Open File in Browser) to check their work.

3:15-4:00 How Could You Use the World Wide Web In Your Classroom?

The final activity of the day required the teachers to work together by grade level to synthesize what they had learned during this in-service and to brainstorm ideas as to how they might be able to utilize the World Wide Web to enhance their students' classroom learning experience. Several of the suggestions shared by the teachers appear below.

1. Students could access several of the excellent Civil War sites on the Web to locate information for research projects they complete during the school year.
2. Teachers could search for existing lesson plans at the curriculum resource sites they had visited.
3. Students could access Native American Indian tribal sites to learn about the history and culture of various Indian tribes they would be studying.
4. Teachers could download activities such as coloring pages and crossword puzzles already available on the Web to use in their classrooms.
5. Students in the early elementary grades could use interactive Web sites dealing with colors and shapes to assist them in learning these concepts.
6. Teachers could find information on the Web regarding Johnny Appleseed which they could incorporate into their lesson on this historical figure.
7. Teachers could use the "Problem of the Day" site to introduce mathematics concepts each day.
8. Teachers who would be teaching the nutrition unit had already decided to use the Nutrition Web Activity developed during the in-service. They also indicated they wanted to add some graphics to the page to enhance it visually.

Feedback from the Teachers

The response from the teachers was very positive. I have included a few of their comments:

"You made the class fun and interesting, and you were so kind and helpful."

"Thank you for a very valuable, informative workshop!"

"You taught us useful skills on the Internet."

"You made the class very relaxing and enjoyable!"

"Had you read our outcomes? The curriculum resources we visited fit so nicely with our grade level outcomes."

"I have been to meetings before where you are shown how to develop web activities; but actually doing it myself, I understand what is going on."

Those teachers who had previously been exposed to the Internet commented that they had learned more than they expected. The teachers who had very limited exposure were astonished at the resources that were available on the World Wide Web. Most, if not all, of the educators left the session eager to explore in more detail the curricular web sites they had visited or wanted to visit and to incorporate this technology into their curriculum.

Critical Success Factors

The success of this in-service seminar was based on the following critical factors:

1. The establishment of an on-site contact person increased communication between the school and the presenters so more relevant training content could be included in the training session.
2. The grouping of teachers by grade and placing them adjacent to teachers of similar grade levels (K-1, 2-3, 4-6) led to sharing of web resource information since the groups had similar curricular interests.
3. The use of HTML pages as the major technique for facilitating technology transfer was central to the success of this training.
4. The creation of lab activities which were challenging in concept yet were relatively simple to implement sustained the interest of all participants.
5. The availability of an appropriate lab facility was essential. Powerful microcomputers, high-speed access, and a sufficient number of computers to allow a hands-on experience created an effective learning environment.

By designing an innovative training session which consisted of easy-to-accomplish, hands-on tasks which were relevant to classroom teachers my colleague and I were successful in getting elementary educators caught up in the web.

Acknowledgments

I would like to thank my colleague in this endeavor, my husband and fellow web educator, Michael Tate.

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